Serial No. 10/758,536
Docket No. YOR920030609US1
YOR.505

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

Claims 1-5. (Canceled).

Claim 6. (Previously Presented) A method of embedding an image into two images, comprising:

performing a digital halftoning process on a Cartesian product of color spaces to embed the image into the two images,

wherein the digital halftoning process comprises an iterative isotropic halftoning process,

wherein the iterative isotropic halftoning process comprises:

for each iteration

for each i

for each j

for each output vector $o = (o_1, o_2, o_3) \in P$

replace $Outimage_k(i, j)$ with o_k for $k = 1, 2, 3$,

set $Error(o) = \sum_{k=1}^{3} v_k \left\| L(Outimage_k - A_k) \right\|$

endfor

find output vector $o_{\min} = \arg\min_{o \in P} Error(o)$

set Outimage(i, j) = o_{min}.

endfor (j)

endfor (i)

wherein if Outimage has not changed between two iterations or maximum number of iterations reached, then exit the iterations loop,

where:

A_1', A_2' and A_3' are input images;

P comprises a set of output vectors;

Output comprises A_1'and A_2' where (A_1,A_2,A_3) = Outimage which resembles (A_1', A_2', A_3');

v_i determines how strongly the error in each image is minimized; and

L comprises a linear space-invariant model of a human vision system.

Claim 7. (Original) The method of claim 6, wherein said Outimage is initialized using a random set of pixels.

Claim 8. (Original) The method of claim 6, wherein said Outimage is initialized using a uniform image of a single output vector.

Serial No. 10/758,536
Docket No. YOR920030609US1
YOR.505

Claim 9. (Original) The method of claim 6, wherein said Outimage is initialized by performing vector error diffusion.

Claim 10. (Original) The method of claim 6, wherein said Outimage is initialized by performing modified error diffusion.

Claim 11. (Currently Amended) The method of claim 6, wherein pixels of the input image ~~is~~ are within a convex hull of the output vectors.

Claim 12. (Original) The method of claim 6, further comprising gamut mapping the images.

Claim 13. (Currently Amended) The method of claim 12, wherein the gamut mapping comprises:

for $p = (p_1, p_2, p_3) \in S$,

$$M(p) = (s_1 p_1 + d_1, s_2 p_2 + d_2, s_3 p_3 + d_3)$$

where:

s_i comprise real numbers denoting scaling factors;

p_i comprise pixels;

S is a set of 3-tuples of pixels;

M is a gamut mapping of a pixel P; and

d_i comprise offset vectors in the color space.

Serial No. 10/758,536
Docket No. YOR920030609US1
YOR.505

Claim 14. (Original) The method of claim 13, further comprising using the Qhull algorithm.

Claim 15. (Original) The method of claim 12, further comprising optimizing the gamut mapping.

Claim 16. (Currently Amended) The method of claim 15, wherein optimizing the gamut mapping comprises:

$$\max_{s_i, d_i} \min\left(\frac{s_1}{\alpha_1}, \frac{s_2}{\alpha_2}, \frac{s_3}{\alpha_3}\right) \text{ such that } M(S) \in H$$

wherein s_i comprise real numbers denoting scaling factors;

wherein α_1 is a "penalty" coefficient of scaling;

wherein M(S) is a mapping of set S of pixels; and

wherein H is the convex hull of the output vectors.

Claim 17. (Previously Presented) The method of claim 15, wherein the optimizing of the gamut mapping comprises:

solving $\max_{s_i, d_i} s_1 s_2 s_3$ such that $M(S) \in H$,

wherein H comprises the convex hull of the output vectors.

Serial No. 10/758,536
Docket No. YOR920030609US1
YOR.505

Claims 18-32. (Canceled).